

Bio Practical File

Name: Taha Husain

Class: 9th E

School: Maharana Mewar Public School

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Teacher: Mrs. Richa Gaur

Chapter-14

Natural Resources

Ozone Layer

What is the Ozone Layer?

Ozone is an Element and is a combination of 3 Oxygen Atoms. The Ozone Layer is a delicate layer of ozone gas that surrounds the Earth, found in the stratosphere about 10 to 50 kilometers above the Earth's surface.

Why is it important for us?

The Ozone layer is responsible for protecting the surface of the Earth and ourselves from the deadly UV Rays given off by the Sun.

How does it work?

It works when a UV Ray hits one of these Ozone particles, it splits the three oxygen atoms leaving behind two still combined and one lone Oxygen atom, Now after them getting separated the lone particle recombines with the two other Oxygen atoms and reforms an Ozone particle thus Saving us from the UV Rays.

How is it destroyed?

The Ozone layer is slowly destroyed by CFC (ChloroFluoro Carbons) that is released by AC (Air Conditioners), Refrigerators, etc.

They destroy the Ozone layer as when the UV Rays break these CFC particles they release chlorine particles and when the Ozone is split the Lone oxygen atom combines with the Chlorine Atom rather than combining with the other two oxygen Atoms thus destroying one Ozone atom and creating a Chlorine Oxide molecule (Chlorine Dioxide ClO_2) and this process keeps happening continuously until all Ozone in that Region is Depleted.

How was the destruction reversed?

The ozone layer was recovered when most of the major world countries banned the use of CFC thus restoring the Ozone layer.

The Greenhouse Effect

What is it?

The Greenhouse effect is a necessary process that makes life on this planet possible as without this effect it would be too cold on Earth for Life to become Possible. The greenhouse effect is the absorption of the Sun's Heat energy (From its light rays) by certain gasses (Like Carbon Dioxide, Water Vapor, Methane, etc) in our atmosphere and then remitting that energy into our Atmosphere as heat that heats the atmosphere thus making life possible.

How can it become Dangerous?

This effect like everything can become dangerous if happening in excess amounts. In today's world, our factories liberate a lot of Carbon Dioxide (CO₂) and Methane (CH₄) into the atmosphere which is a Greenhouse gas (It can absorb the Sun's light and reemit it as Heat), Thus increasing the Greenhouse effect. This warming up of the Earth's Atmosphere is catastrophic as it is Melting glaciers at the North Pole and South Pole (Arctic and Antarctica) thus making the global Sea levels rise and thus threatening the complete submerging of major coastal cities across the world which will damage millions of dollars of property and threaten human Lives. This is called Global Warming.

How can it be prevented?

The Greenhouse effect is necessary for life's survival but it can be really dangerous if it happens in excess amounts. It can be prevented by controlling the amount of CO₂ and CH₄ we release into the atmosphere by filtering them out before realizing them or trying to develop ways that can reduce their emission. Ultimately it's up to us to save our Planet from something we definitely can control.

Thanks for your Time